Green River Monitoring Without Borders

Why Here?

Biodiversity

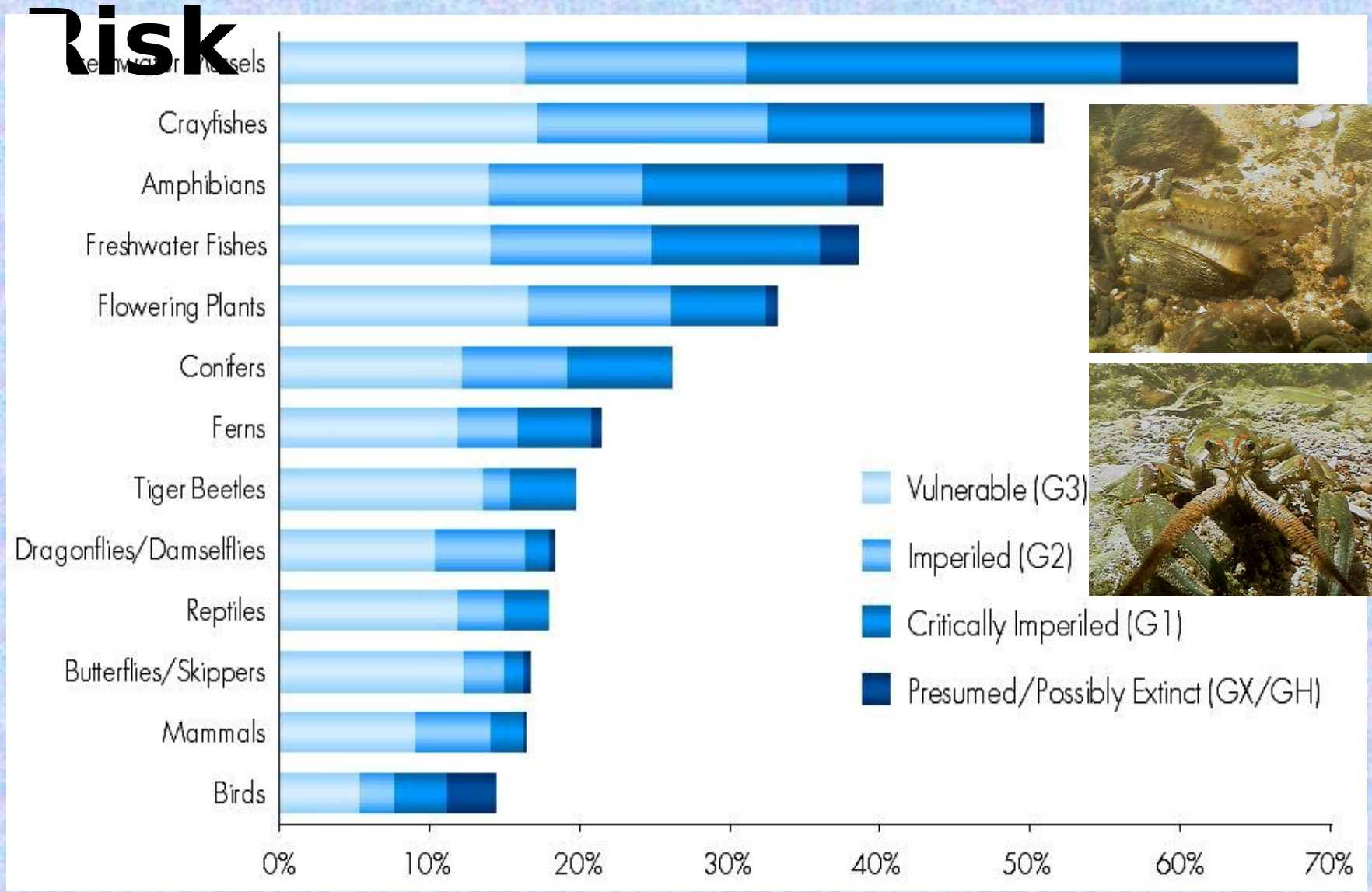
- Mussels - 60 species
  - 21 imperiled
  - 7 endangered (federal)
- Fish - 151 species
  - 7 endemic
  - 12 globally rare
- Karst Systems including

  Mammoth Cave Complex

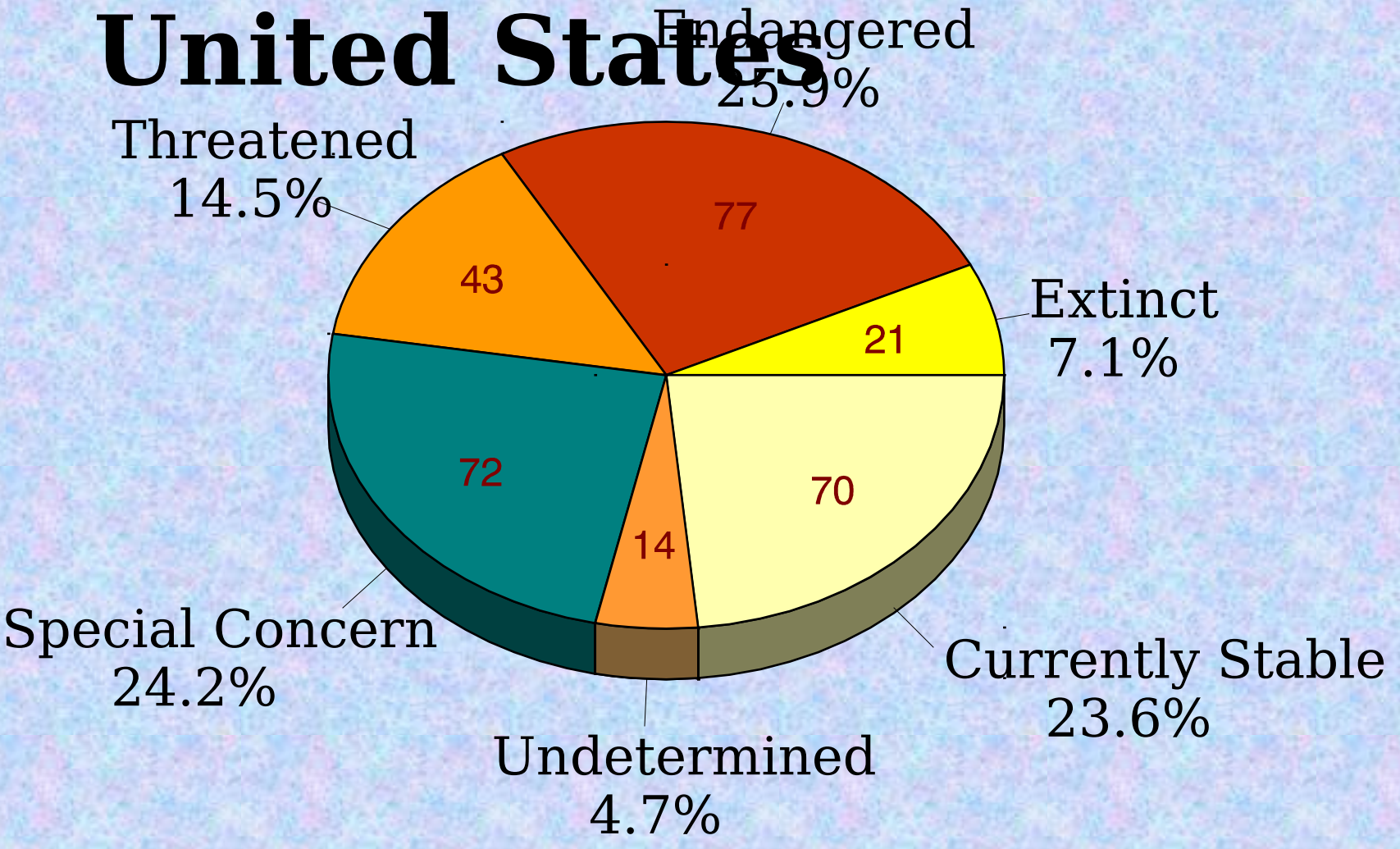
Spring along the Green in Mammoth Cave NP

Splendid Darter, endemic, *Etheostoma barrense*

Proportion of U.S. Species a
Risk



Conservation Status of Freshwater Mussels in the United States



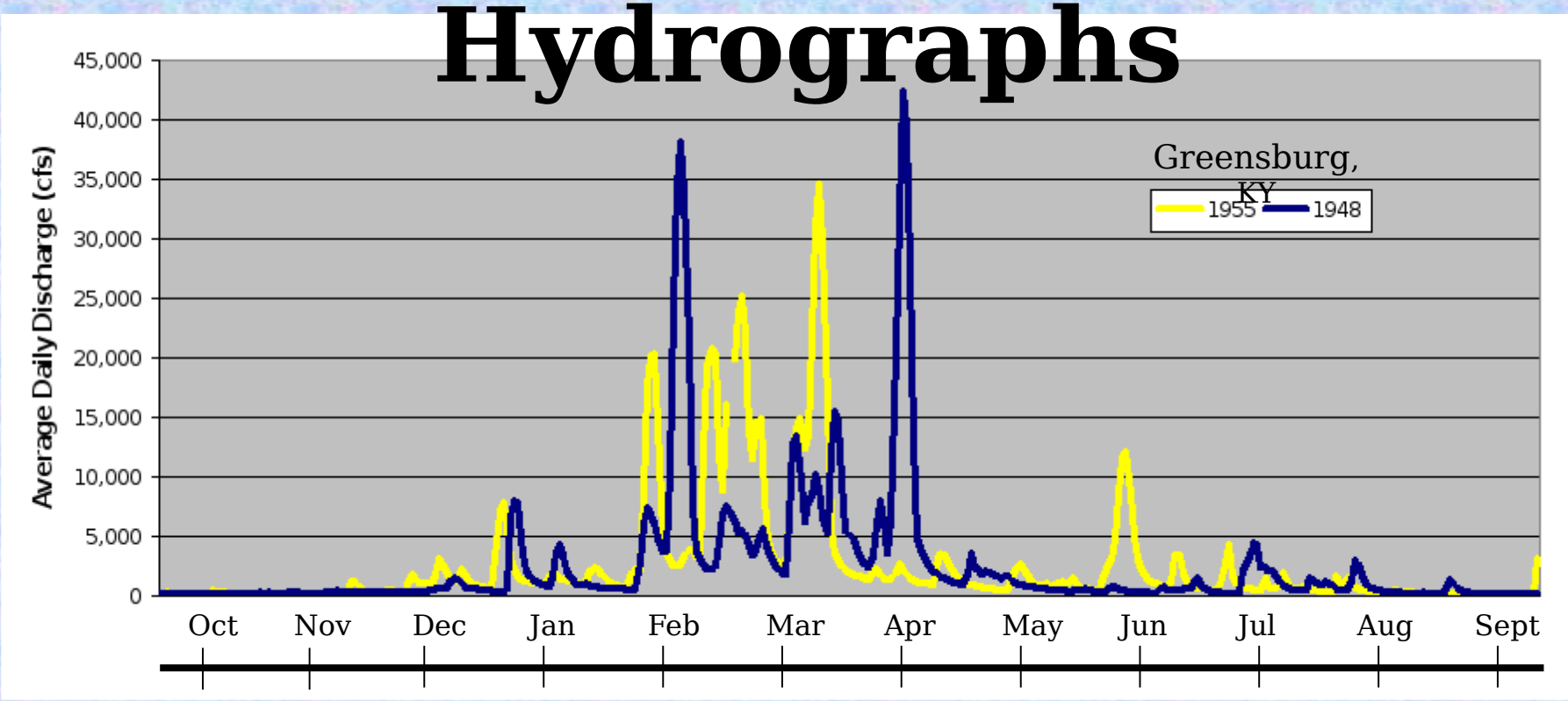
Green River Lake

Pilot Project for Sustainable Rivers Project

Basic Goal
1999

Modify operation of Green River Lake to mimic pre-impoundment conditions downstream of Corps flood control project

Pre-Impoundment Hydrographs



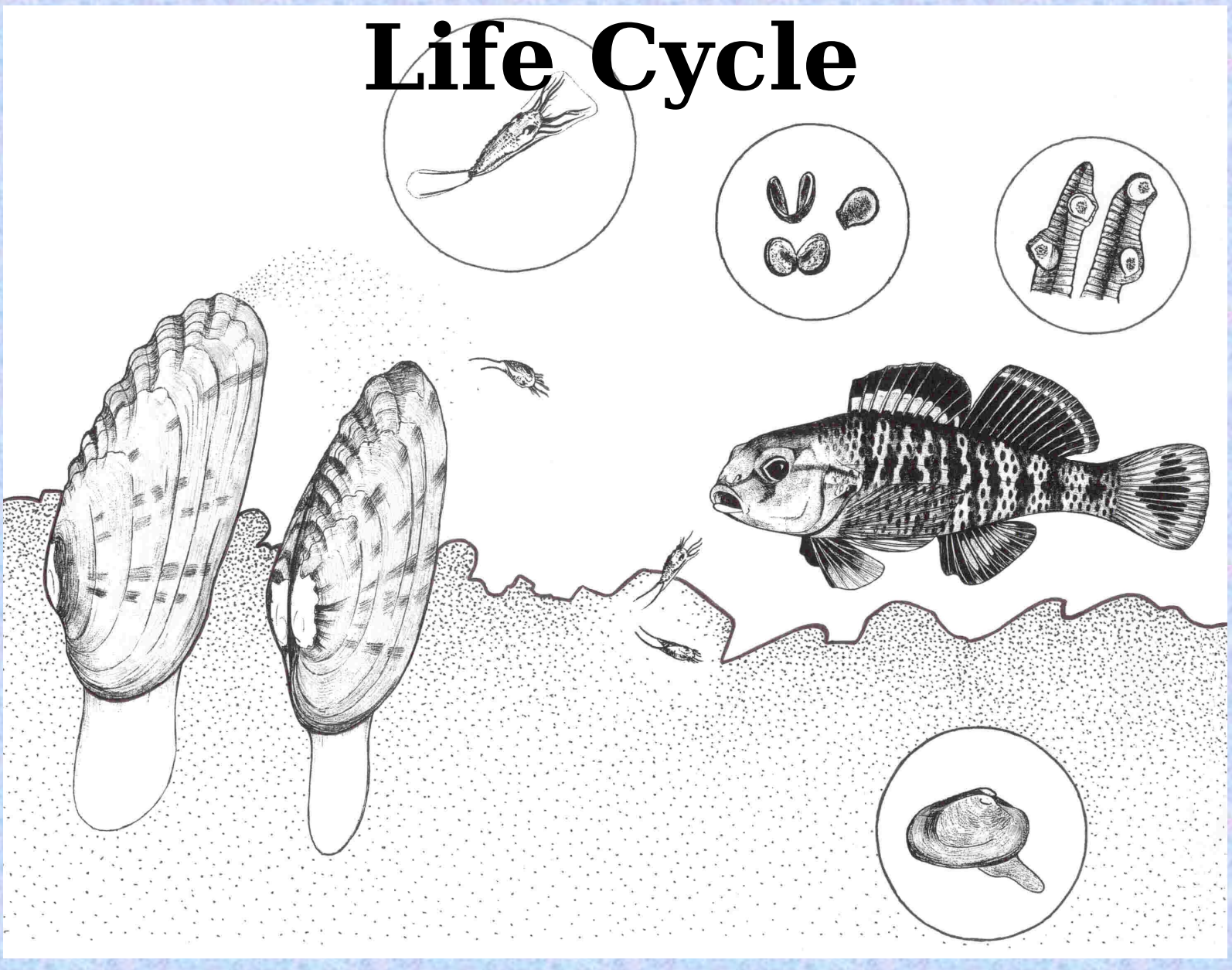
- Fall spawning (fish and mussel)
- concentration of prey species

- Spring spawning (fish and mussel)
- emergence of flying adult aquatic insects
- channel structure and substrate

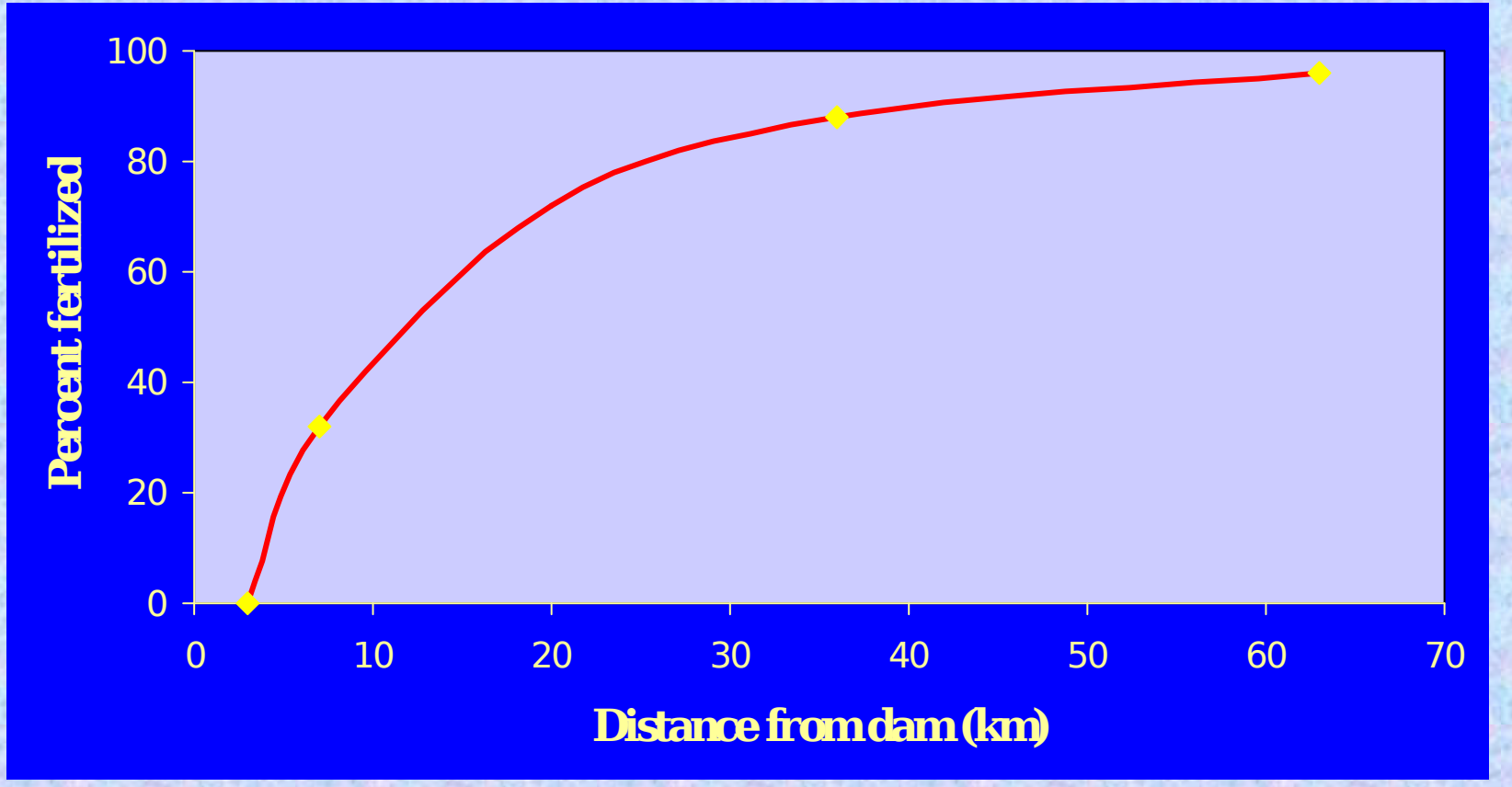
Greensburg Monitoring Site

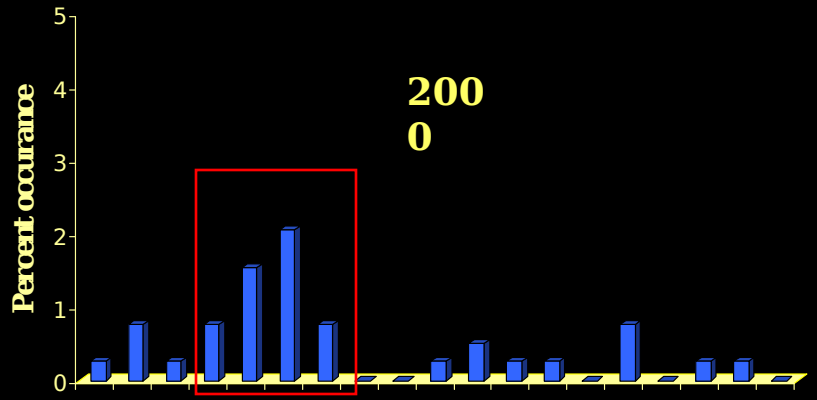
Recruitment

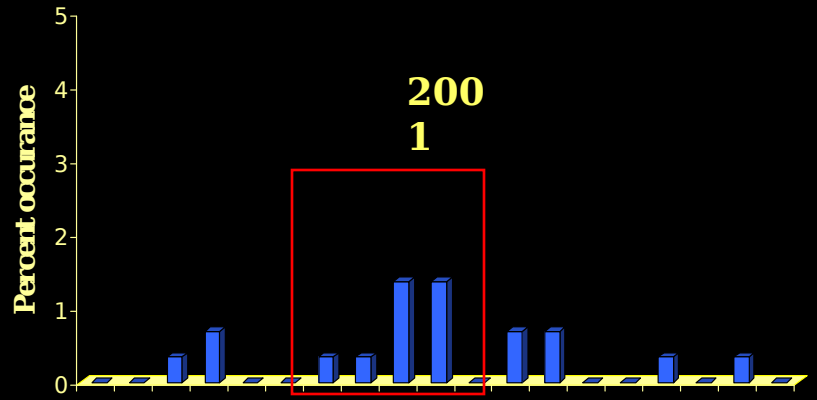
Freshwater Mussel Life Cycle

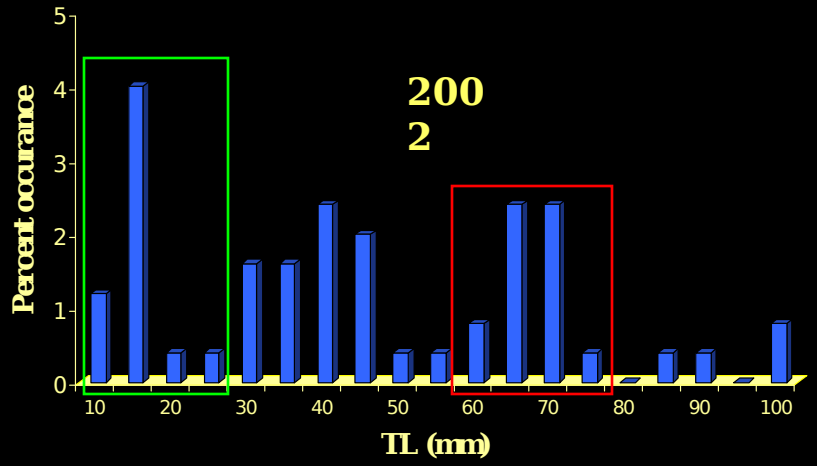


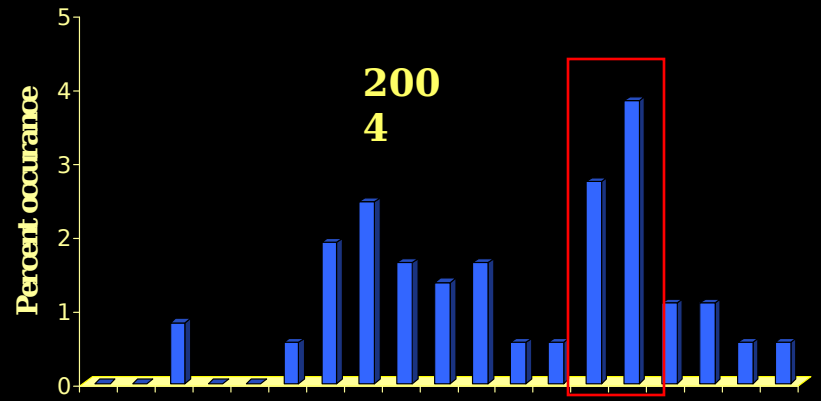
Mean Fertilization by Site

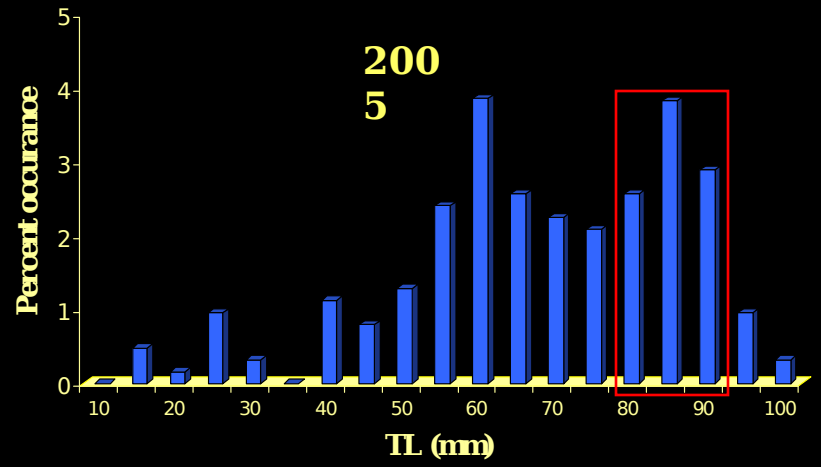


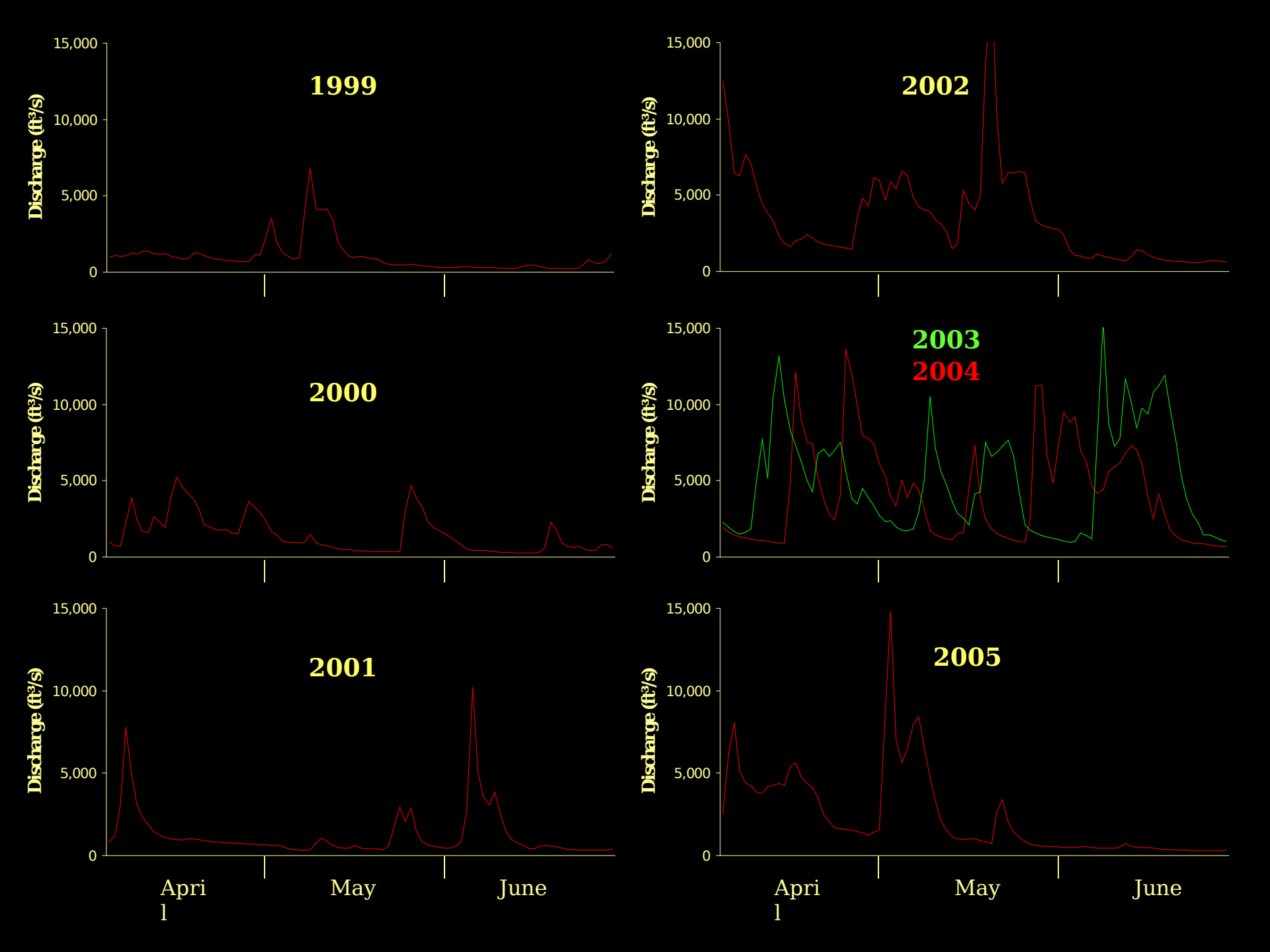

2000
Percent occurance
0
1
2
3
4
5


2001
Percent occurance
0
1
2
3
4
5

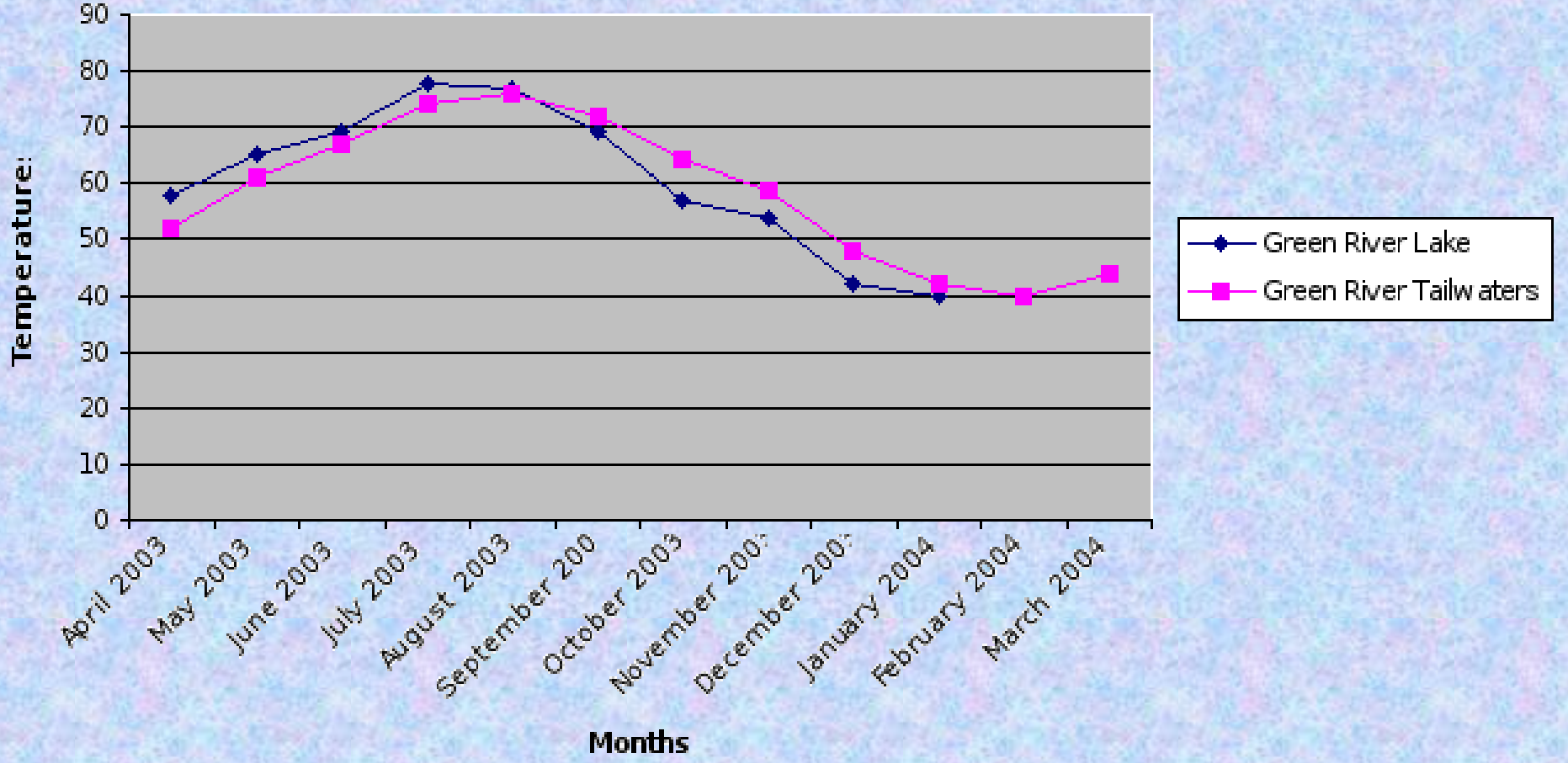

2002
Percent occurance
0
1
2
3
4
5
10
20
30
40
50
60
70
80
90
100
TL (mm)


2004
Percent occurance
0
1
2
3
4
5

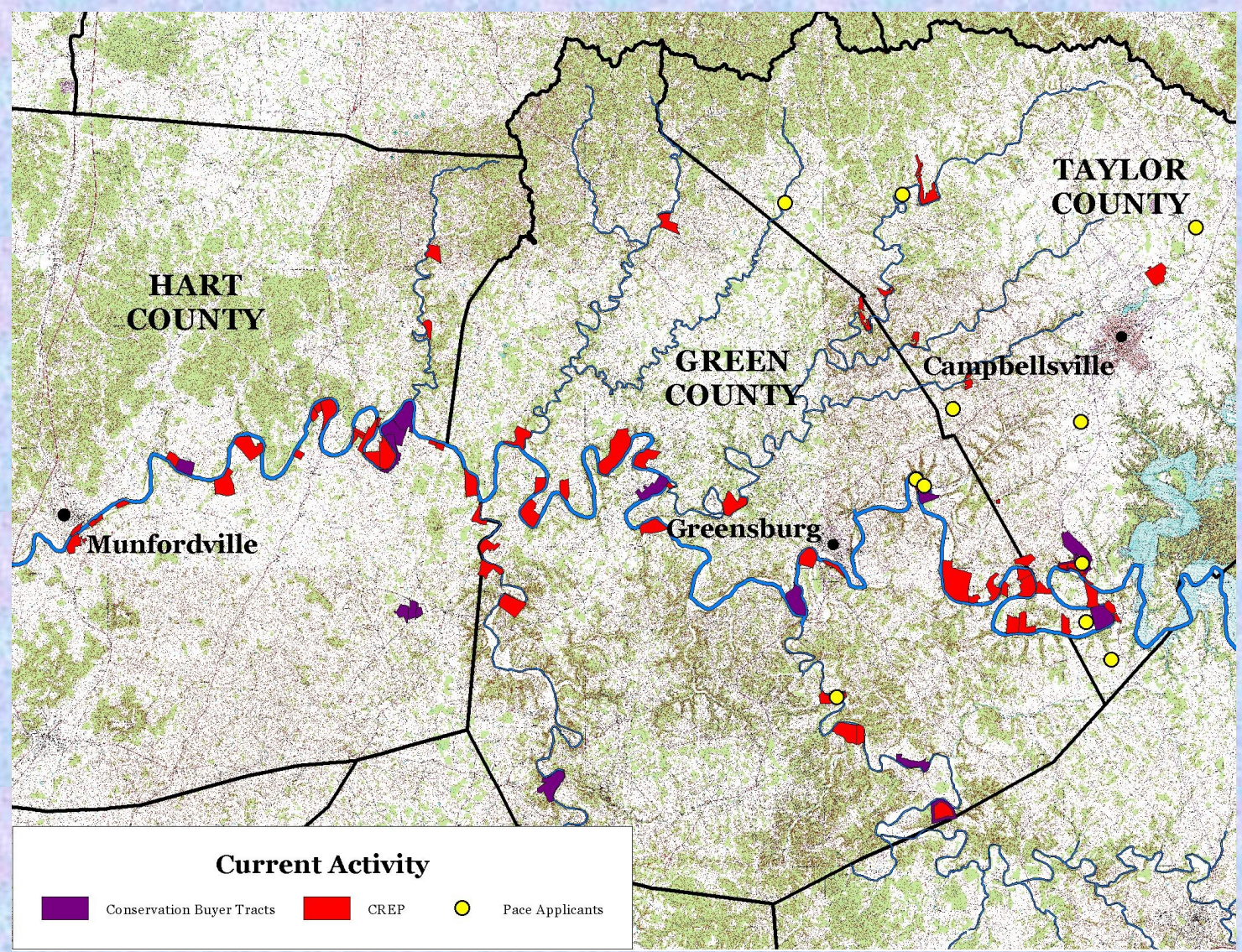

2005
Percent occurance
0
1
2
3
4
5
10
20
30
40
50
60
70
80
90
100
TL (mm)


1999
2002
2000
2003
2004
2001
2005
Discharge (ft³/s)
15,000
10,000
5,000
0
April
May
June

Temperatures Comparison



Conservation Reserve Enhancement Program



CREP Practices

Bottomland Hardwoods

Wetlands

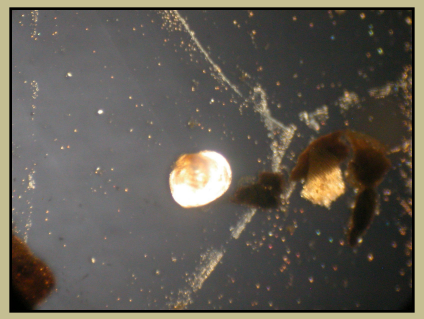
Prairie Grasses & Forbes

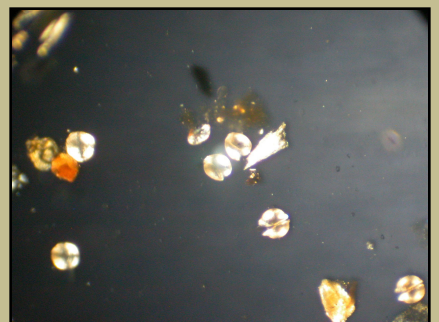
Section 1135 Restoration Project

November 2001

August 2005

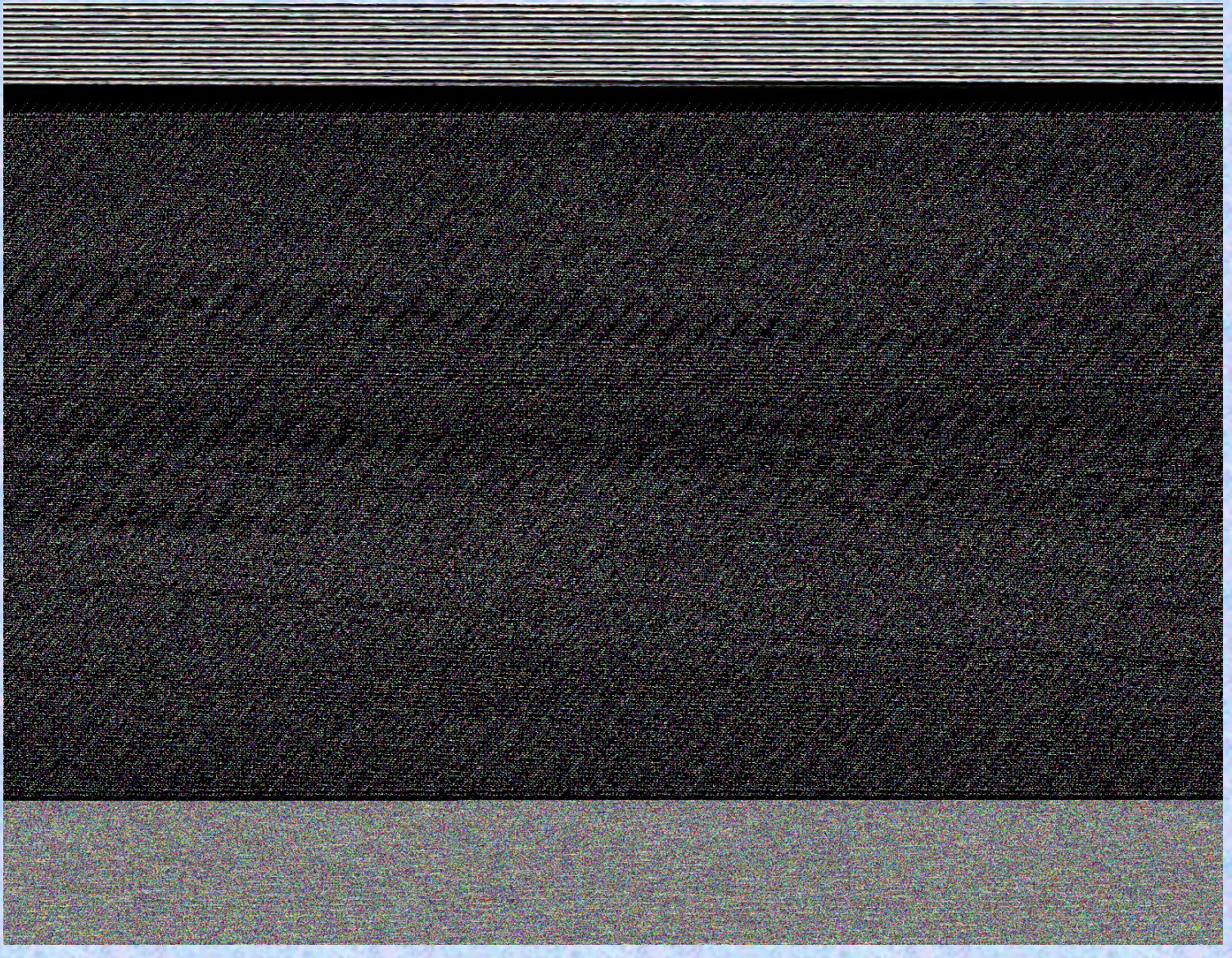
PROGRESS AND STATUS OF THE PROJECT TO PROPAGATE AND RESTORE ENDANGERED MUSSELS IN THE GREEN RIVER AT MAMMOTH CAVE NATIONAL PARK.





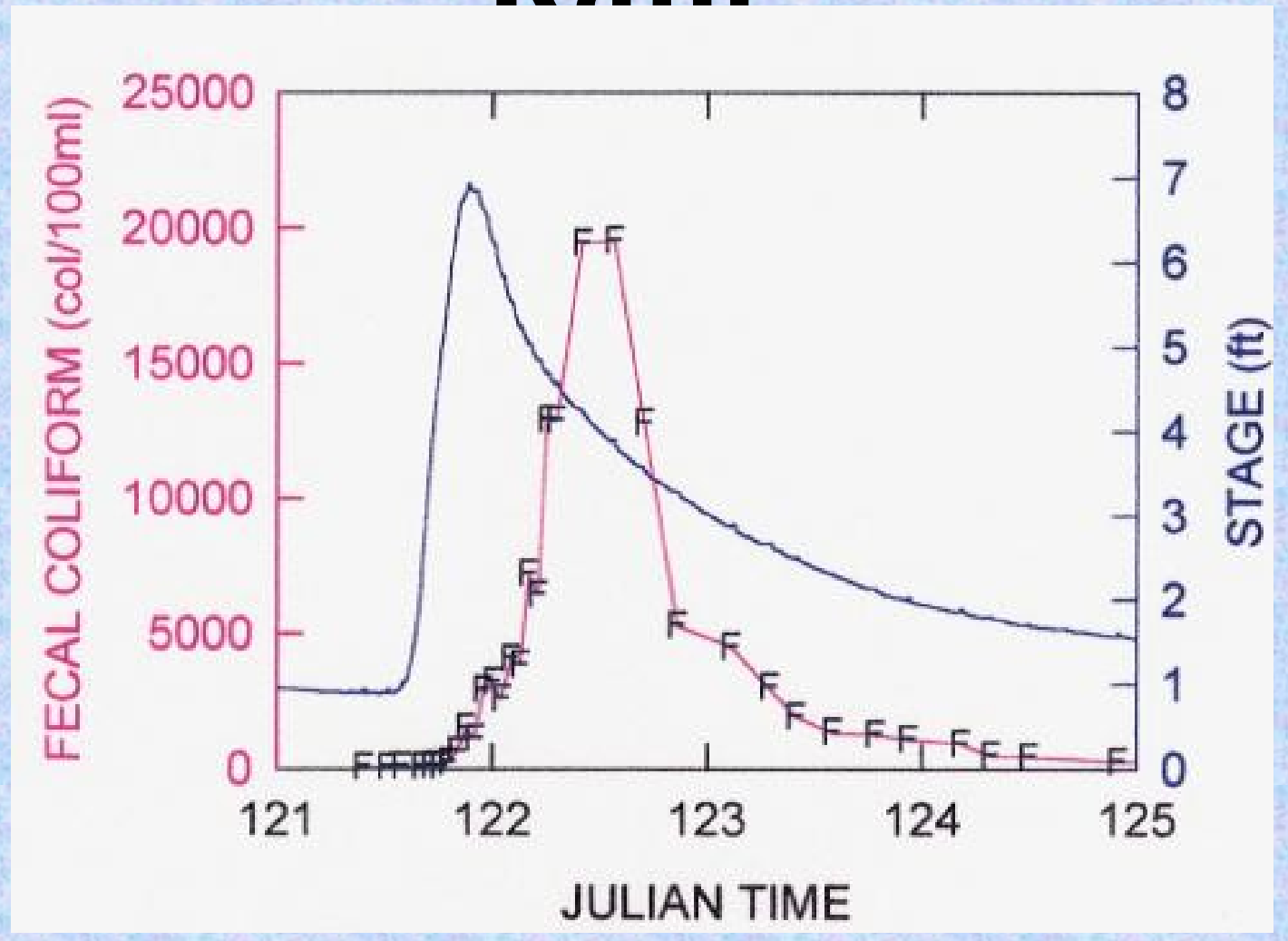
Cave WQ Sampling Via Wells

Flood Pulse Response

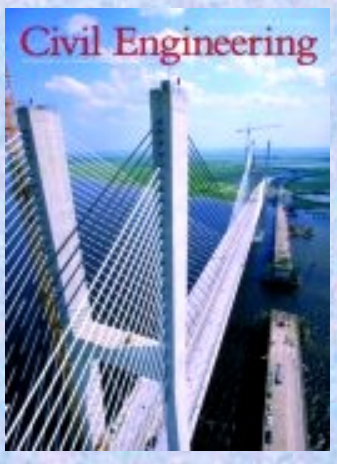


Flood Pulses = Degraded WQ

Typical Fecal Coliform Response to Moderate Rain



Public Relatio



Richie Kessler, TNC, and Christine Whitman, Secretary, USEPA

Senator Mitch McConnell, Secretary of Agriculture Ann Veneman,

Conservation Partners

Take Away Points

- Corps support for monitoring is limited.
- Get involved
  developmen
- Find partner
- “Just Do It”.
- Enjoy succes